



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/511,751

02/24/2000

Boby Joseph

99,815

5539

20306

7590

02/10/2005

MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
300 S. WACKER DRIVE
32ND FLOOR
CHICAGO, IL 60606

EXAMINER

LANIER, BENJAMIN E

ART UNIT

PAPER NUMBER

2132

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/511,751	Applicant(s) JOSEPH ET AL.	
	Examiner Benjamin E Lanier	Art Unit 2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-10, 13-16, 20-22, 25-28, 30-34, 36-42 is/are rejected.
- 7) ☒ Claim(s) 11, 12, 23, 24, 29 and 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed 03 November 2004 amends claims 1, 2, 13, 14, 25, 31, 33, cancels claims 5, 6, 7, 17, 18, 19, and adds claims 37-42. Applicant's amendments have been fully considered and are entered.

Response to Arguments

2. Applicant's arguments filed 03 November 2004 have been fully considered but they are not persuasive. Applicant's argument that the Pinder reference does not disclose an encryption key including both a first base key and a key extension that is used to encrypt and decrypt communications between a first and a second network device is not persuasive because as accurately disclose in Applicant's arguments (Page 15), Pinder discloses the use of a control word for encryption and decryption of selected program data. This control word is generated using a base key and entitlement control messages (Col. 4, lines 14-59), which would meet the limitation of a key extension due to the broad use of the term in the claim language.

3. Applicant's argument that the Pinder reference does not disclose that the security determined by the first encryption key is stronger than the security determined by the second encryption key is not persuasive because Pinder discloses that the keys used in the system are a more secure 112 bit key and a less secure 56 bit key (Col. 6, lines 46-53).

4. Applicant's argument that the Pinder reference does not disclose a authorization key that is used to negotiate a first encryption key, wherein the authorization key includes a base key and a key extension is not persuasive because Pinder discloses that authorization information in the form of entitlement management message (EMM) and

Art Unit: 2132

entitlement control messages (ECM) are used to create an authenticate control word for the set top box (Col. 4, line 37 – Col. 5, line 10). The EMMs would meet the limitation of the base key of the authorization key and the ECMs would once again meet the limitation of the key extension.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 5, 8, 9, 13, 14, 17, 20, 21, 25, 26, 30-32, 36, 37, 40 are rejected under 35 U.S.C. 102(e) as being anticipated by Pinder, U.S. Patent No. 6,105,134. Referring to claims 1, 2, 5, 8, 13, 14, 17, 20, 25, 26, 30-32, 36, 37, 40, Pinder discloses a conditional access system wherein a service distribution organization (second network device) broadcasts an encrypted instance of the service. Encrypted instance is broadcast over a transmission medium and is received in a large number of set top boxes (first network device, third network device), each of which is attached to a television set. Encrypted instance contains instance data, and entitlement control messages. It is a function of the set top box to determine whether the encrypted instance should be decrypted using the decryptor included in the set top box which uses a control word, which meets the limitation of key material, as a key to decrypt encrypted instance. The control word is produced by control word generator from information contained in entitlement control

Art Unit: 2132

message and information from authorization information stored in the set top box. For example, authorization information may include a key (base key) for the service and an indication of what programs in the service the subscriber is entitled to watch (key extension). If the authorization information indicates that the subscriber is entitled to watch the program of encrypted instance, the control word generator uses the key together with the information from the entitlement control message (key extension) to generate control word, which meets the limitation of a first network device having a first set of key material (Col. 4, lines 14-59), the first set of key material including a first base key and a key extension in addition to the first base key, a second network device having the first set of key material and a second set of key material, the second key material including a second base key, wherein the second network device is capable of communicating with the first network device using security determined by the first set of key material. The authorization information used in a particular set top box is obtained from one or more entitlement management messages addressed to the set top box. Subscribers generally purchase services by the month or a one time event, and after a subscriber has purchased a service, the service distribution organization sends set entitlement management messages to the set top box belonging to the subscriber as required for the purchased services (Col. 4, line 60 – Col. 5, line 10). The limitation of a third network device having the second set of key material, the third network device is capable of communicating with the second network device using security determined by the second set of key material is met by a set top box that is not authorized to watch a certain instance of the broadcast service and therefore would lack the particular portion of the authorization information that allows access to the broadcast instance once the control

Art Unit: 2132

word is generated. Regarding the limitation of the security being determined by the first key material being stronger than the security being determined by the second set of key material is met by previously mentioned scenario where an authorized set top box would generate a control word with a higher security level than that of an set top box lacking authorization.

Referring to claims 9, 21, Pinder discloses that the set top box cryptographic key is generated based on the public key used to encrypt the entitlement messages (Col. 8, lines 39-44).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3, 4, 6, 7, 15, 16, 18, 19, 27, 28, 33, 34, 38, 39, 41, 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pinder, U.S. Patent No. 6,105,134, in view of Mniszewski, U.S. Patent No. 4,731,840. Referring to claims 3, 4, 6, 7, 15, 16, 18, 19, 27, 28, 33, 34, 38, 39, 41, 42, Pinder does not disclose an encryption key threshold length. Mniszewski discloses a method for encryption and transmission of digital data wherein the DES encryption is used that has 64 bit encryption keys (Col. 1, lines 44-45), which meets the 64 bit threshold limitation. It would have been obvious to one of ordinary skill in art at the time the invention was made to use DES encryption in the data encryption security module of Heer because DES encryption is the US standard cryptosystem as taught in Mniszewski (Col. 1, lines 31-35).

Art Unit: 2132

9. Claims 10, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pinder, U.S. Patent No. 6,105,134, in view of Tatebayashi, U.S. Patent No. 5,124,117. Referring to claims 10, 22, Pinder does not disclose that the computed keys could be a Diffie-Hellman key. Tatebayashi discloses a cryptographic key distribution system that uses DES encryption standards and Diffie-Hellman keys (Col. 2, lines 21-68). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Diffie-Hellman keys in the data encryption module of Heer in order to provide secure communications as taught in Tatebayashi (Col. 1, lines 26-38).

Allowable Subject Matter

10. Claims 11, 12, 23, 24, 29, 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art does not disclose using the hash of an internal key and network device identifier, specifically a software serial number, as a key extension.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 2132


extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin E Lanier whose telephone number is 571-272-3805. The examiner can normally be reached on M-Th0 7:30am-5:00pm, F 7:30am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Benjamin E. Lanier


GILBERTO BARRON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100